

Trends in Bariatric Surgery: Kentucky Medicaid, 2014 to 2018

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This report presents data on trends in bariatric surgeries among Kentucky Medicaid beneficiaries from 2014 to 2018.

Key Findings

- The largest percent of bariatric surgery procedures nationwide occur in the South.
- The number of bariatric surgeries among Kentucky Medicaid beneficiaries has risen between 2014 and 2018.
- Females consistently compose between 86-88% of the Kentucky Medicaid beneficiaries receiving bariatric surgeries.
- The majority of bariatric surgeries are performed on obtained by Kentucky Medicaid beneficiaries between the ages of 30 and 49.

Obesity is a known public health concern nationwide. In 2015-2016, the CDC estimates that 39.8% of adults in the United States were considered obese.¹ Among adults in Kentucky, the prevalence of self-reported obesity was 34.2% in 2016.²

- Estimates by the American Society for Metabolic and Bariatric Surgery show a 44% increase in bariatric procedures between 2011 and 2017 (from an estimated 158,000 procedures nationwide in 2011 to an estimated 228,000 procedures nationwide in 2017).³
- In 2016, the Healthcare Cost and Utilization Project (HCUP) National Inpatient Sample (NIS) estimates that there were 196,195 discharges identified as a bariatric surgical procedures. The South Region of the United States had the highest proportion of bariatric surgery procedures in 2016.
- In Kentucky, the HCUP State Inpatient Database (SID) estimates 3,223 discharges identified as bariatric surgery procedures in 2016.

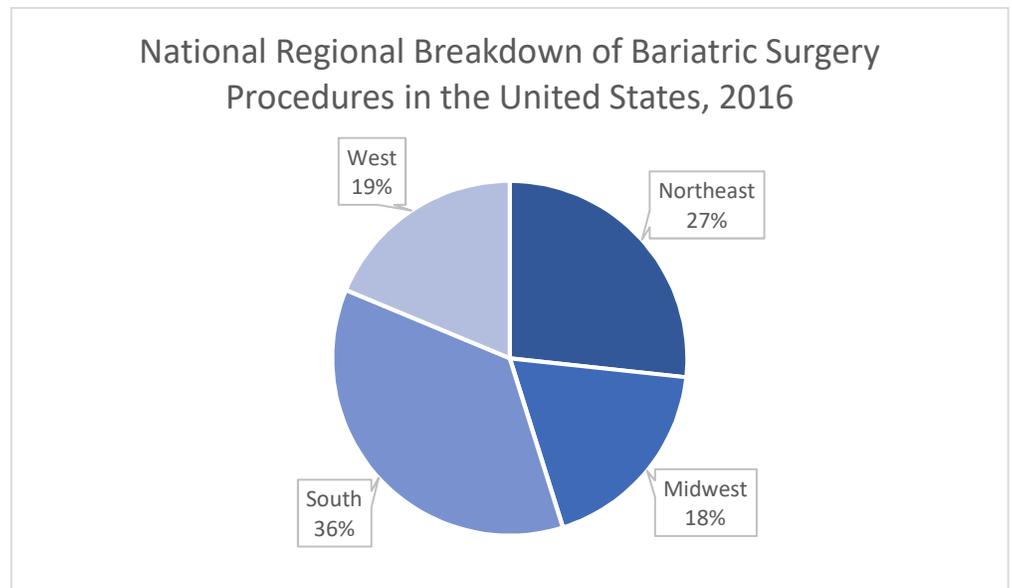


Figure 1. National regional breakdown of bariatric surgery procedures in the United States, 2016. Data source: Healthcare Cost and Utilization Project (HCUP) National Inpatient Sample (NIS), available via HCUPnet, August 2019.

Bariatric surgeries among Kentucky Medicaid beneficiaries have been increasing since 2014.

- Between 2014 and 2015, a 96.7% increase occurred in the number of bariatric surgeries among Kentucky Medicaid beneficiaries.
- Surgeries among Kentucky Medicaid beneficiaries continued to rise after 2015, peaking in 2017 at 2,115 surgeries, and experienced a slight leveling off between 2017 and 2018.

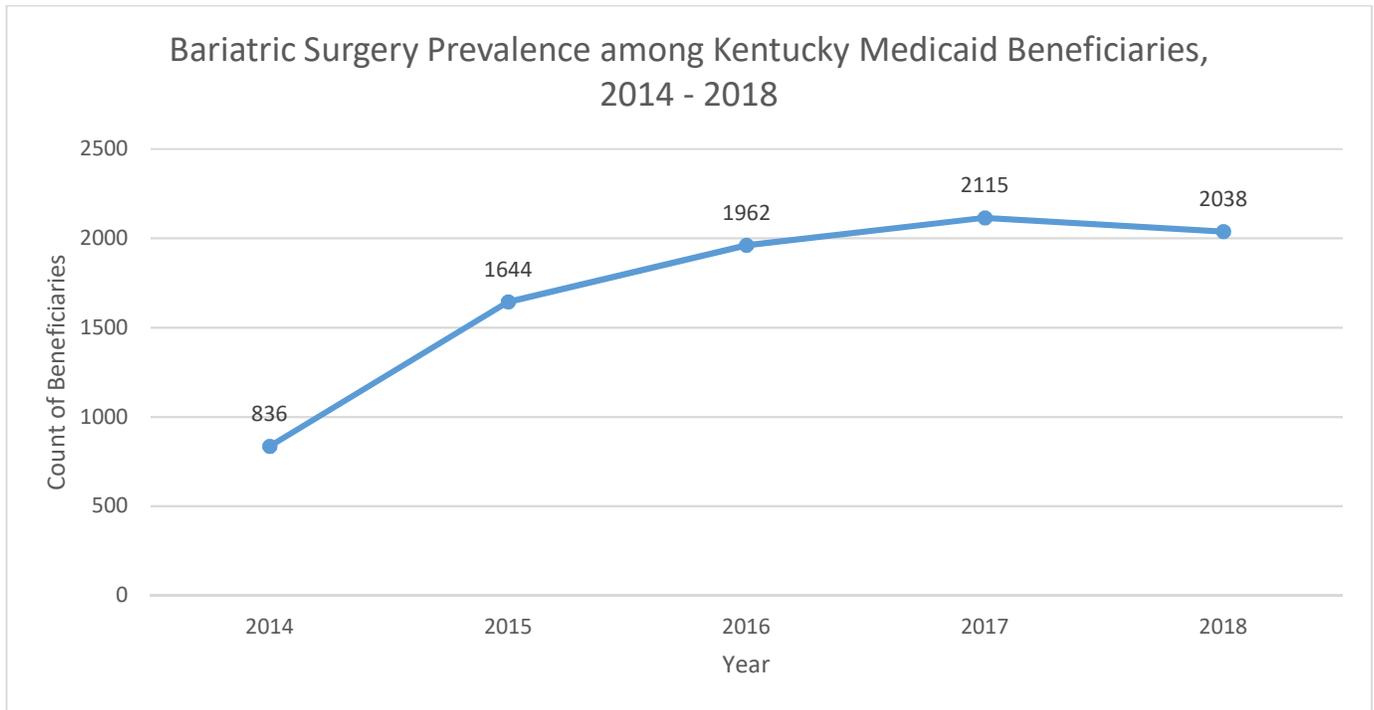


Figure 2. Overall number of bariatric surgery among Kentucky Medicaid beneficiaries, 2014 to 2018.

Data source: Kentucky Department for Medicaid Services Office of Health Data & Analytics, August 2019. Data are provisional and subject to change.

Females compose the majority of the beneficiaries in the Kentucky Medicaid population receiving bariatric surgeries.

- The sex-specific trends mimic the overall trends in bariatric surgery among Kentucky Medicaid beneficiaries.
- Consistently, between 2014 and 2018, females represent 86-88% of bariatric surgeries performed in the state.
- Between 2014 and 2015, there was a 98.6% increase in bariatric surgeries among female Kentucky Medicaid beneficiaries. For males, between 2014 and 2015, there was an 84.6% increase in bariatric surgeries.

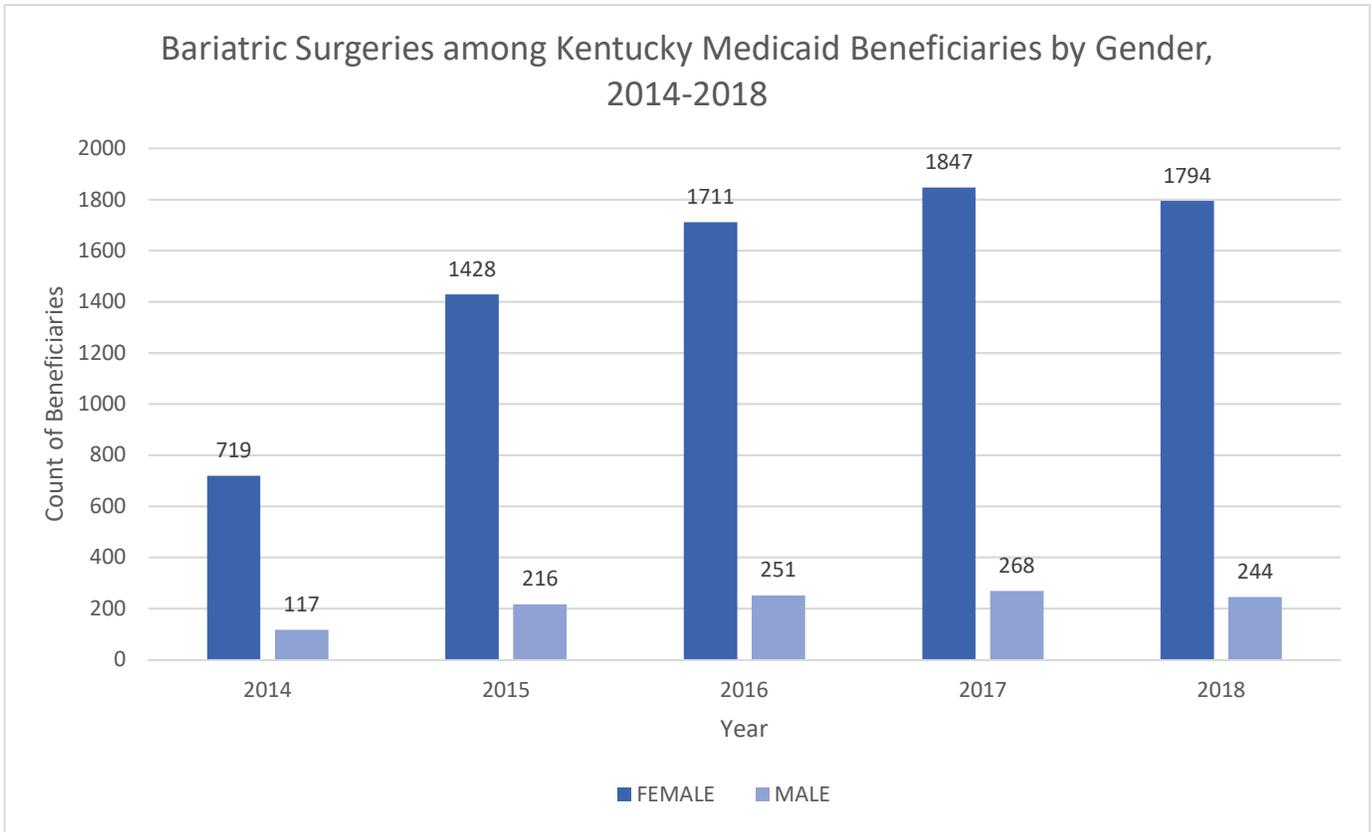


Figure 3. Bariatric surgery prevalence among Kentucky Medicaid beneficiaries stratified by sex, 2014 to 2018. Data source: Kentucky Department for Medicaid Services Office of Health Data & Analytics, July 2019. Data are provisional and subject to change.

Among Kentucky Medicaid beneficiaries, more bariatric surgeries are performed on adults aged 30-49 than any other age group.

- 30-39 year old Kentucky Medicaid beneficiaries consistently composed between 32-35% between 2014 and 2018. A similar consistency is seen among 40-49 year old beneficiaries in the same windows (between 29-31%) and beneficiaries aged 50-59 (between 18-20%).
- The rate of bariatric surgeries among Kentucky Medicaid beneficiaries aged 60-64 remained fairly consistent from 2014 to 2018, hovering between 3-5%.

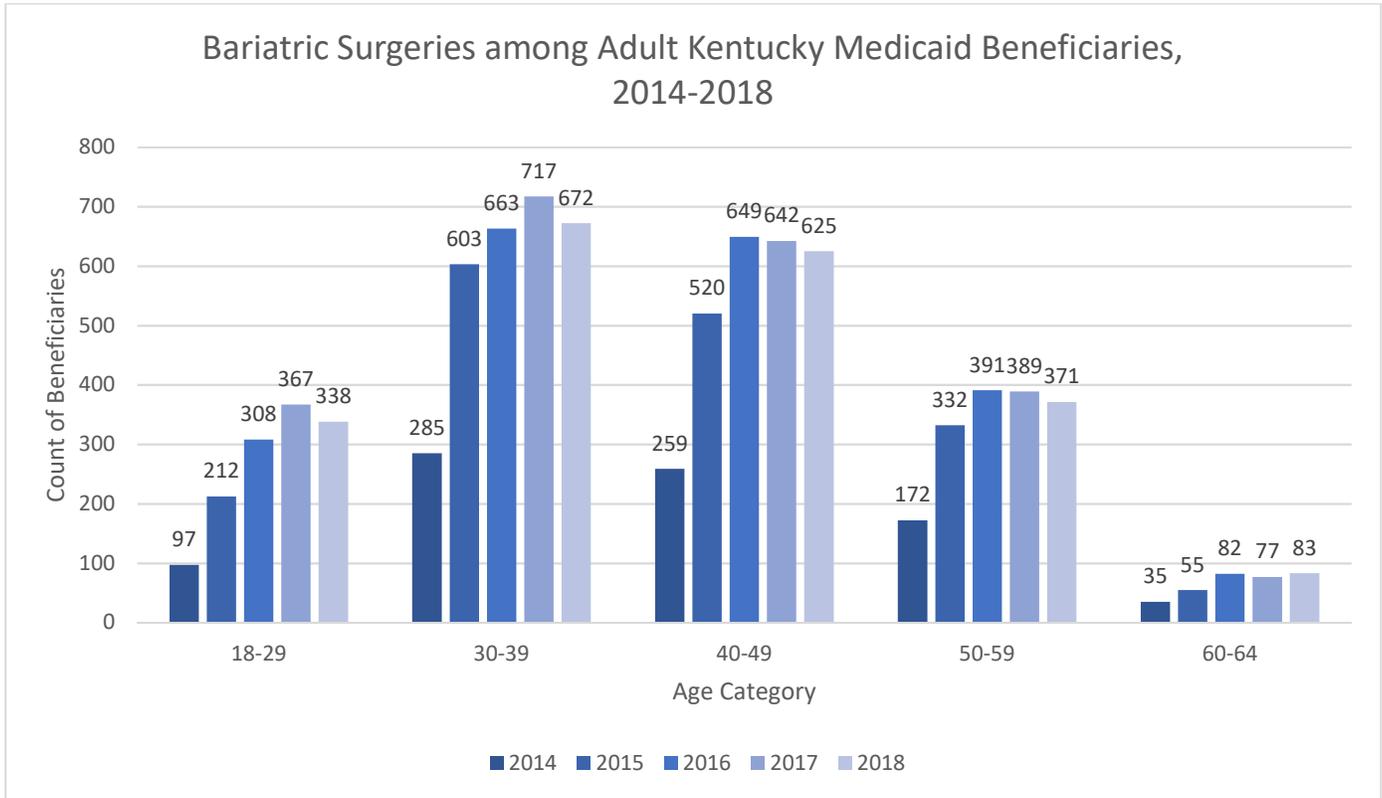


Figure 4. Bariatric surgery prevalence among adult Kentucky Medicaid beneficiaries stratified by age categories, 2014 to 2018. Data source: Kentucky Department for Medicaid Services Office of Health Data & Analytics, August 2019. Data are provisional and subject to change.

Summary

Bariatric surgeries are being performed at higher volume both nationally and among the Kentucky Medicaid beneficiary population. Approximately 87% of surgeries are performed on female Kentucky Medicaid beneficiaries. The majority of surgeries are performed on beneficiaries between the ages of 30 and 49. Though bariatric surgeries can be performed for a variety of reasons, the procedures are popularly performed as medical interventions for weight loss. With obesity impacting an increasing rate of Americans nationwide, more of these surgeries may be seen in the Kentucky Medicaid beneficiary population.

Data source and methods

Healthcare Cost and Utilization Project (HCUP) National Inpatient Sample (NIS) via HCUPnet

Figure 1 represents data available from the HCUP NIS, provided by the Agency for Healthcare Research and Quality (AHRQ). All data was collected through the online query system available at <https://hcupnet.ahrq.gov>. Data was queried on August 14, 2019.

Figure 1. National regional breakdown of bariatric surgery procedures in the United States, 2016.

Percentages of the total number of discharges for bariatric surgery procedures for the regions of the United States identified by AHRQ. Appendix 1 contains a list of the *International Classification of Disease*, Tenth Revision, Procedure Coding System (ICD-10-PCS) codes used to identify the procedures of interest.

Kentucky Department for Medicaid Services (DMS) Office of Health Data and Analytics

Figure 2, Figure 3, and Figure 4 represent data available from the Kentucky Medicaid Administrative Claims database as of August 2019. All data are provisional and subject to change.

Figure 2: Overall prevalence of bariatric surgery among Kentucky Medicaid beneficiaries, 2014 to 2018.

Raw counts of beneficiaries with a procedure identified as a bariatric surgery, all ages. Appendix 1 contains a list of the *International Classification of Disease*, Ninth Revision, Procedure Coding System (ICD-9-PCS) and ICD-10-PCS codes used to identify population of interest. Appendix 2 contains a list of relevant Current Procedural Terminology (CPT) codes, Healthcare Common Procedure Coding System (HCPCS) codes, *International Classification of Disease*, Ninth Revision, Clinical Modification (ICD-9-CM) codes, and *International Classification of Disease*, Tenth Revision, Clinical Modification (ICD-10-CM) codes used to identify the population of interest.

Figure 3: Bariatric surgery prevalence among Kentucky Medicaid beneficiaries stratified by sex, 2014 to 2018.

Raw counts of beneficiaries with a procedure identified as a bariatric surgery procedure, all ages, stratified by sex. Appendix 1 contains the list of relevant ICD-9-PCS and ICD-10-PCS codes used to identify the population of interest. Appendix 2 contains the list of CPT/HCPCS codes, ICD-9-CM codes, and ICD-10-CM codes used to identify the population of interest.

Figure 4. Bariatric surgery prevalence among adult Kentucky Medicaid beneficiaries stratified by age categories, 2014 to 2018.

Raw counts of adult (ages 18-64) beneficiaries with a procedure identified as a bariatric surgery procedure, stratified by age category. Appendix 1 contains the list of relevant ICD-9-PCS and ICD-10-PCS codes used to identify the population of interest. Appendix 2 contains the list of CPT/HCPCS codes, ICD-9-CM codes, and ICD-10-CM used to identify the population of interest.

Appendices

Appendix 1. ICD-9-PCS/ICD-10-PCS codes used to identify bariatric surgical procedures.

ICD-9-PCS/ ICD-10-PCS Code	Description
4382	Laparoscopic vertical (sleeve) gastrectomy
4389	Open and other partial gastrectomy
4438	Laparoscopic gastroenterostomy
4439	Other gastroenterostomy without gastrectomy
4468	Laparoscopic gastroplasty
4495	Laparoscopic gastric restrictive procedure
4496	Laparoscopic revision of gastric restrictive procedure
4497	Laparoscopic removal of gastric restrictive device(s)
0D1607*	Bypass stomach with autologous tissue substitute, open approach
0D160J*	Bypass stomach with synthetic substitute, open approach
0D160K*	Bypass stomach with nonautologous tissue substitute, open approach
0D160Z*	Bypass stomach, open approach
0D163J4	Bypass stomach to cutaneous with synthetic substitute, percutaneous approach
0D1647*	Bypass stomach with autologous tissue substitute, percutaneous endoscopic approach
0D164J*	Bypass stomach with synthetic substitute, percutaneous endoscopic approach
0D164K*	Bypass stomach with nonautologous tissue substitute, percutaneous endoscopic approach
0D164Z*	Bypass stomach, percutaneous endoscopic approach
0D1687*	Bypass stomach with autologous tissue substitute, via natural or artificial opening, endoscopic
0D168J*	Bypass stomach with synthetic substitute, via natural or artificial opening, endoscopic
0D168K*	Bypass stomach with nonautologous tissue substitute, via natural or artificial opening, endoscopic
0D168Z*	Bypass stomach, via natural or artificial opening, endoscopic
0DB64Z3	Excision of stomach, percutaneous endoscopic approach, vertical
0DV64CZ	Restriction of stomach with extraluminal device, percutaneous endoscopic approach

For all ICD-10-PCS codes, the appearance of any of the following ICD-9-CM and ICD-10-CM diagnosis codes identified in Appendix 3 in any diagnosis slot used in conjunction with the above ICD-10-PCS codes were considered to be a bariatric surgery.

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Appendix 2. CPT/HCPCS⁴ and ICD-9-CM/ICD-10-CM codes used to identify bariatric surgery procedures.

CPT/HCPCS Codes	Description
43644	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and Roux-en-Y gastroenterostomy (roux limb 150 cm or less)
43645	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and small intestine reconstruction to limit absorption
43659	Unlisted laparoscopy procedure, stomach
43770	Laparoscopy, surgical, gastric restrictive procedure; placement of adjustable gastric restrictive device
43771	Laparoscopy, surgical, gastric restrictive procedure; revision of gastric restrictive device component only
43773	Laparoscopy, surgical, gastric restrictive procedure; removal and replacement of adjustable gastric restrictive device component only
43775	Laparoscopy, surgical, gastric restrictive procedure; longitudinal gastrectomy
43842	Gastric restrictive procedure, without gastric bypass, for morbid obesity; vertical-banded gastroplasty
43843	Gastric restrictive procedure, without gastric bypass, for morbid obesity; other than vertical-banded gastroplasty
43845	Gastric restrictive procedure with partial gastrectomy, pylorus-preserving duodenoileostomy and ileoileostomy (50 to 100 cm common channel) to limit absorption (biliopancreatic diversion with duodenal switch)
43846	Gastric restrictive procedure, with gastric bypass for morbid obesity; with short limb (150 cm or less) Roux-en-Y gastroenterostomy
43847	Gastric restrictive procedure, with gastric bypass for morbid obesity; with small intestine reconstruction to limit absorption
43848	Revision, open, of gastric restrictive procedure for morbid obesity, other than adjustable gastric restrictive device
43999	Unlisted procedure, stomach
S2082	Laparoscopy, surgical; gastric restrictive procedure, adjustable gastric band

For CPT code 43846, all claims were considered to be a bariatric surgery. For all other CPT/HCPCS codes, the appearance of any of the following ICD-9-CM and ICD-10-CM diagnosis codes identified in Appendix 3 in any diagnosis slot used in conjunction with the above CPT codes were considered to be a bariatric surgery.

Appendix 3. ICD-9-CM and ICD-10-CM codes to identify obesity.

ICD-9-CM or ICD-10-CM Code	Description
278	Overweight, obesity and other hyperalimentation
278.0	Overweight and obesity
278.00	Obesity, unspecified
278.01	Morbid obesity
278.03	Obesity hypoventilation syndrome
649.1*	Obesity complicating pregnancy, childbirth, or the puerperium
V85.2	Body mass index between 25-29, adult
V85.21	Body mass index, 25.0-25.9, adult
V85.24	Body mass index, 28.0-28.9, adult
V85.31	Body mass index, 31.0-31.9, adult
V85.36	Body mass index, 36.0-36.9, adult
V85.37	Body mass index, 37.0-37.9, adult
V85.38	Body mass index, 38.0-38.9, adult
V85.39	Body mass index, 39.0-39.9, adult
V85.4*	Body mass index 40 and over, adult
E66.0*	Obesity due to excess calories
E66.1	Drug-induced obesity
E66.2	Morbid (severe) obesity with alveolar hypoventilation
E66.8	Other obesity
E66.9	Obesity, unspecified
Z68.25	Body mass index (BMI) 25.0-25.9, adult
Z68.3*	Body mass index (BMI) 30-39, adult
Z68.4*	Body mass index (BMI) 40 or greater, adult
Z68.54	Body mass index (BMI) pediatric, greater than or equal to 95 th percentile for age

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4. *American Medical Association CPT 2017 Professional*. Chicago, IL: American Medical Association; 2016.

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